

Review of Automated External Defibrillators (AED)

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Stockton Borough Council
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What is cardiac arrest?

Cardiac arrest

A cardiac arrest happens when your heart stops pumping blood around your body.

If someone has suddenly collapsed, is not breathing normally and is unresponsive, they are in cardiac arrest.

There is no time to lose. Even if you are untrained your actions can help.

British Heart Foundation



What causes cardiac arrest?

- The most common cause of a cardiac arrest is a life threatening abnormal heart rhythm called ventricular fibrillation (VF).
- Ventricular fibrillation happens when the electrical activity of the heart is interrupted or inefficient causing the heart to stop pumping properly.
- There are various causes of VF, mostly related to problems with the heart.



Who is most likely to suffer from sudden cardiac arrest?

Patients with pre existing heart disease are most likely to experience sudden cardiac arrest

Heart-related causes of VF	Other causes of VF
Coronary heart disease	Lack of oxygen
Heart attack	Electrocution
Cardiomyopathy	Cocaine
Congenital heart disease	Significant blood loss
Heart valve disease	
Acute Myocarditis (inflammation of the heart muscle)	
Arrhythmias	



What are the risk factors? How could it be prevented?

Cardiovascular disease is caused by a combination of risk factors including

Non modifiable risk factors	Modifiable risk factors	Conditions
Increasing age	Smoking	Diabetes
Gender - male	Overweight and obesity	High blood pressure
Family history of CVD	Diet	High blood cholesterol
Ethnicity	Physical activity	

Prevention includes to stop smoking, weight loss, increase in physical activity, healthy diet, early diagnosis and treatment of diabetes, high blood pressure and high cholesterol.



How frequent is sudden cardiac arrest?

60,000 cardiac arrests
per year **in England** (1/1000 population)

28,000 (46%)
attempted to resuscitate

22,400 (80%)
at home

5,600 (20%)
in public place

2,408 (8.6%)
survive



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Consensus Paper on Out-of-Hospital Cardiac Arrest in England. Resuscitation Council 2015

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What does this mean for Stockton?

200 cardiac arrests

per year in **Stockton** (1/1000 population)

92 (46%)

attempted to resuscitate

160 (80%)

at home

40 (20%)

in public place

17 (8.6%)

survive

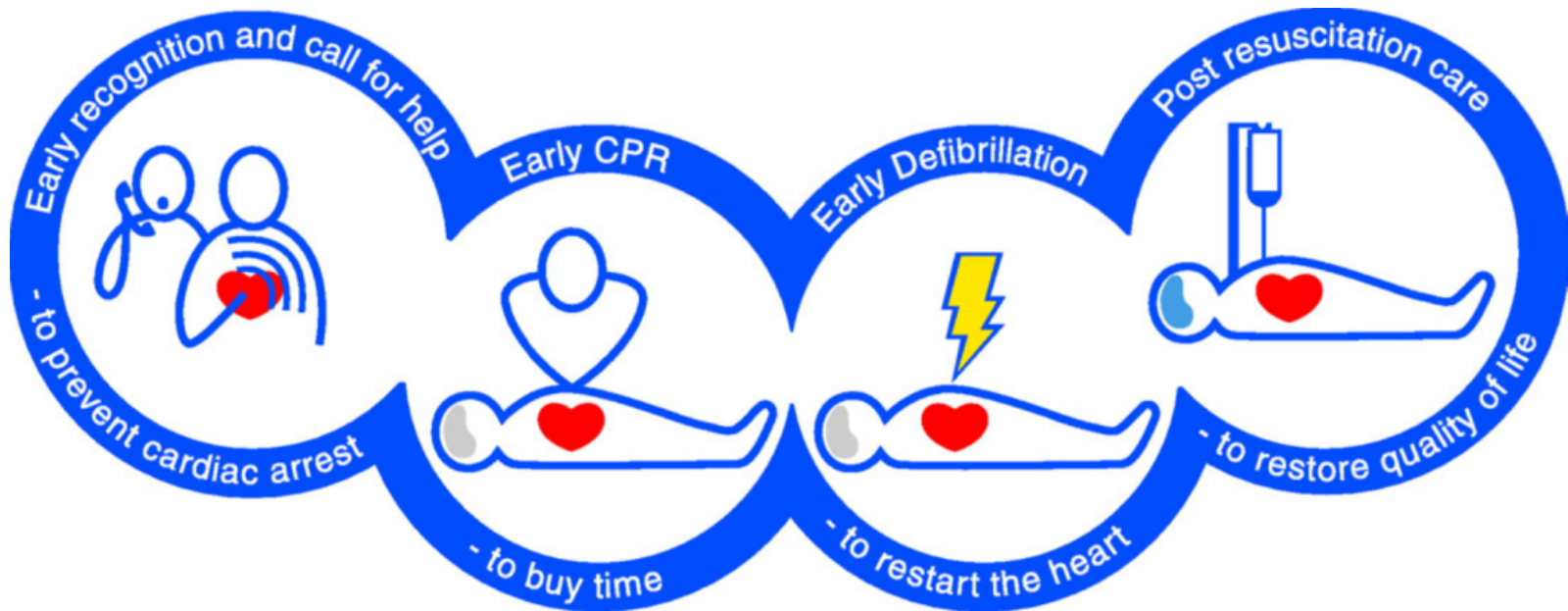


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Response to sudden cardiac arrest



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Outcomes of resuscitation

- Survival rate in England is 8.6% compared to North Holland 21%, Seattle 20% and Norway 25%
- Every minute without CPR and defibrillation reduces chances of survival by 7–10%
- Initial bystander CPR in England is 43%

Criteria for successful outcome

- Their cardiac arrest is witnessed or discovered immediately
- 999 called immediately
- effective CPR without delay
- The cause is a sudden disturbance of heart rhythm
- The heart is in a 'shockable' rhythm
- Defibrillator close by
- Use of defibrillator without delay
- Emergency medical services arrive very quickly



What are automated external defibrillators?

- AED to provide a high energy electric shock to restore the heart's normal rhythm
- Easy to use device which will talk user/ lay person through process
- Defibrillation within 3-5 minutes of collapse increases the chance of survival
- Defibrillators should be easily accessible – no lockable cabinets
- Bystander defibrillation in 1.74%- higher if people/staff has been trained to use them



Where are Defibrillators needed?

Busy public places frequented by 1000 people per day are estimated to have one cardiac arrest every five years

The Resuscitation Council recommends defibrillators

- In places with large numbers of people (railway stations, shopping centres, stadiums)
- In places where there is an increased risk of cardiac arrest (sport and leisure facilities)
- In workplaces with staff at risk and where staff is trained to do CPR and use AED

Schools are not recommended to provide AED unless there is a child or staff at higher risk



What is the current situation in Stockton?

- No comprehensive mapping of AEDs – Ambulance Service has best information
- Splash and Castlegate Shopping Centre have defibrillators
- No routinely available information on AED use in community



Considerations for further defibrillators

- Where are other heavily frequented public places or places?
- Where are places with people at higher risk of cardiac arrest?
- What is the need for training and maintenance?
- Accessibility of defibrillators e.g. out of hours?



Thank you



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